GEOTRICHUM NOVAKII N. SP.

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(Received December 1, 1966)

Several yeasts were isolated from decaying fruits in Egypt. The strains were identified as *Torulopsis westerdijkii* VITÉZ et NOVÁK, *Torulopsis sake* (SAITO et OTA) LODDER et KREGER van RIJ, *Paratorulopsis ingeniosa* (DI MENNA) NOVÁK et ZSOLT, *Paratorulopsis maris* (VAN UDEN et ZO BELL) NOVÁK et ZSOLT (names according to the system of NOVÁK and ZSOLT, 1961), *Geotrichum candidium* LINK and a *Geotrichum* strain different from the *Geotrichum* species described till now. This strain is described in the following.

Material and methods

The strain was isolated from peach *(Prunus persica)* and is maintained in the collection of the National Research Centre, Cairo.

According to the previously expressed opinion of one of the authors (ZSOLT et al., 1961; NOVÁK and ZSOLT, 1961), *Geotrichum* may be considered as a yeast-like fungus, therefore the methods proposed by the Dutch School of yeast taxonomy (LODDER and KREGER VAN RIJ, 1952) were applied for characterizing the new strain.

Results

Growth on malt agar: After 3 days, at 25 °C, long dichotomically branched, septate, 3—4 μ thick hyphae and 3—4 x 2—3 μ more or less rectangular arthrospores (Fig. 1).

After 1 month, at 25 °C, the streak culture was white, dull, flat.

Slide culture on potato agar: similar microscopis picture as on malt agar.

Sporulation: No ascospores were formed on Na-acetate agar.

Fermentation: No fermentation was observed.

Assimilation of sugars: Glucose, galactose and maltose were assimilated. Assimilation tests with sucrose, lactose and raffinose gave negative results.

Assimilation of potassium nitrate: negative.

Growth on ethanol as sole source of carbon: positive.

„Starch" formation: absent.

Carotenoid pigments: not produced.

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Discussion

Macroscopic appearence of the colonies, mycelial growth and production of arthrospores, lack of budding and of ascospores and absence of fermentation show that our strain belongs to the genus *Geotrichum* LINK.

Yeasts showing different characteristics during the standard identification process are generally considered as members of different species. Although this assumption is probably not entirely correct, in the present stage of the taxonomy of fungi it seems useful to be accepted. In the special case of our new strain this is all the more reasonable because this strain differs from the other *Geotrichum* species in the assimilation pattern of sugars which characteristic is a rather constant one (NOVÁK and ZSOLT, 1964). Therefore we describe the strain as a member of a new species: *Geotrichum novakii*. The specific name „novakii" refers to DOCTOR E. K. NOVÁK a distinguished scientist of yeast taxonomy.

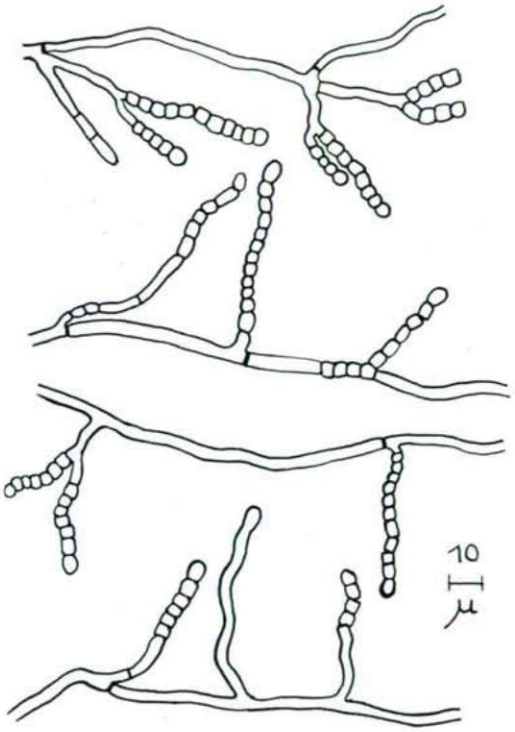

Figure 1. *Geotrichum novakii n. sp.* Growth on malt agar

MORENZ (1964) distinguishes further *Geotrichum* species on the basis of morphological characteristics and assimilation tests with further carbon sources. As regards this method, there cannot be raised any logical objection. Nevertheless, we maintain the methods of the Dutch School generally used by yeast taxo-

nomists in distinguishing species although we are conscious that, as a result of a rather wide-spread mutual agreement of scientists, also these methods are more or less provisional.

Geotrichum gracile (WEIGMANN et WOLFF) Windisch accepted by MORENZ seems to be closest to our strain but *Geotrichum gracile* has only doubtful galactose and maltose assimilation and has no dichotomically branched hyphae.

A comparison of the most important characteristics of the new species and of the other *Geotrichum* species is given in Table I.

Table I. Comparison of the most important characteristics of the *Geotrichum* species

	assimilation of							
name	glucose	galactose	sucrose	maltose	lactose	raffinose	ethanol	potassium nitrate
G. linkii VÖRÖS—FELKAI	+	−	−	−	−	−	+	−
G. candidum LINK	+	+	−	−	−	−	+	−
G. novakii n. sp.	+	+	−	+	−	−	+	−
G. matalense CASTELLANI	+	+	+	+	+	+	+	−

Caretta (1963) considers *Geotrichum linkii* as a synonym of *Torulopsis zeylanoides*. This must be a mistake because *Geotrichum linkii* shows no budding but has all the morphological characteristics of a *Geotrichum*.

Little can be said about the phylogenetical position of the *Geotrichum* species. A possibility of their deduction from the perfect genus *Endomyces* is, anyhow worth of consideration.

Diagnosis

Geotrichum novakii n. sp.

In agaro maltato septatae hyphae (3—4 μ) et arthrosporae (3—4 x 2—3 μ). Cultura (post unum mensem, 25 °C) albida, parum nitens, plana.

Pseudomycelium nullum. Sporulatio nulla. Fermentatio nulla.

Glucosum, galactosum, maltosum et alcoholum assimilantur, saccharosum, lactosum, raffinosum et nitras kalicus non assimilantur.

„Amylum" et pigmenta carotenoidica non synthetisantur.

Isolata ex fructo *Pruni persici*.

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Acknowledgements. The authors are deeply indebted to Professor Hussein Ghaleb Osman for his inspiring interest and his willing support in this work. The research was carried out while one of us (J. Zs.) possessed a UAR grant for which he is very grateful.